

International E-Conference on

NUTRITION AND FOOD SCIENCE

December 09-10, 2020 | Virtual Webinar

Extracted Total Carotenoids from *Sporidiobolus pararoseus* Relieve Acute Lung Inflammation Induced by Cigarette Smoking in Mice

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Cigarette Smoke (CS) has been correlated with increased susceptibility to respiratory infections and it is a major risk for acute lung inflammation and Chronic Obstructive Pulmonary Disease (COPD). Carotenoids have enormous applications in fields of industry, medicine and health due to their properties such as color and functional activities like antioxidant, anticancer and anti-inflammation. Carotenoids, extracted from *Sporidiobolus pararoseus*, have antioxidant, antidiabetic and antitumor effects. These carotenoids have a similar structure to lycopene, which is demonstrated effective in the treatment of lung inflammation and COPD. In our study, *Sporidiobolus pararoseus* cells were broken and total carotenoids were applied to a silica gel column to separate and purify these pigments. Forty-eight C57BL/6 male mice were randomly divided into 6 groups, exposed to ambient air or CS and treated with vehicle, lycopene or total carotenoids at different doses (9, 12, 18 mg/kg body weight). In groups treated with total carotenoids, especially at the highest dosage (18 mg/kg), the results showed decrease in the high levels of MDA and the activities of CAT, SOD in lung samples, as well as TNF- α and IL 6 levels in lungs and Bronchoalveolar Lavage Fluid (BALF). In addition, it decreased nitrite content and MPO activity in BALF, restored the level of GSH in lung samples and attenuated the morphological changes in the lung tissues. The highest dose of total carotenoids showed a stronger effect than lycopene. These results demonstrated that total carotenoids from *Sporidiobolus pararoseus* have effective functions for acute lung inflammation induced by cigarette smoke, which suggested a possible positive intervention for the treatment of COPD.

Keywords: *Sporidiobolus Pararoseus*, Total Carotenoids, Acute Lung Inflammation, Cigarette Smoking.

Biography:

Margaret Zaitoun is a PhD student in Nutrition and Food Hygiene, at Nanjing Medical University (China) under the supervision of Prof. Qing Feng. I joined the research group with prof. He Qian and Yahui Guo in Food science and technology department, at Jiangnan University (China) then i got master's degree in 2019. I got my bachelor degree in Health Sciences/Nutrition at al Baath University (Syria) in 2010 and hired as teaching assistant. I attended several forums in Nanjing, China and i published various articles.